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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,075	11/27/2001	Xujun Hua	10326-54US-1	1552

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EXAMINER
ALVO, MARC S

ART UNIT	PAPER NUMBER
1731	5

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/994,075	Applicant(s) HUA ET AL.	
	Examiner Steve Alvo	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 October 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 20-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 20-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-7, 10, 11 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/20308 in view of ECKERT or EVANS et al.

WO 96/20308 teaches inhibiting the darkening effect arising from the effect of calcium carbonate filler (page 2, lines 6-26) in mechanical pulp by bleaching the filled mechanical pulp with any bleaching agent, including sodium hydrosulfite (page 4, lines 29-35). ECKERT teaches the alternativeness of bleaching mechanical pulp with hydrosulfites and bisulfites as reducing agents that remove or alter the lignin in the pulp so that the resultant pulp is no longer light absorbing or dark in color. It would have been obvious to substitute the bisulfite of ECKERT for the hydrosulfite of WO 96/20308, as they are alternative bleaching and brightening agents for mechanical pulps in preventing the darkening of the pulp. See Table 3 of WO 96/20308, for a pH of 8.8. Or EVANS et al teaches treating pulp including groundwood (column 2, line 17) with sodium carbonate and sodium sulfite to prevent alkaline darkening of the pulp (column 1, lines 35-40) and reduce the need for additional bleaching (column 3, lines 49-51). It would have been obvious to one of ordinary skill in the art to further prevent darkening of the pulp and reduce the need for further bleaching in the process of WO 96/20308 by treating the pulp with sulfite and carbonate in the manner taught by EVANS et al. The order of addition has not been shown to be critical and it would have been obvious to add the carbonate and sulfite sequentially or simultaneously.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/20308 in view of ECKERT or EVANS et al as applied to claim 1 above, and further in view of TSUKAMOTO.

TSUKAMOTO et al teaches adjusting the pH during bleaching with either an acid or a buffering agent, see column 4, lines 12-28. It would have been obvious to maintain the pH of WO 96/20308 with either a buffering agent or the addition of an acid as taught by TSUKAMOTO.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/20308 in view of ECKERT or EVANS et al as applied to claim 1 above, and further in view of NYE or EP 0 608 687.

NYE (column 2, lines 6-9) or EO 0 608 687 teach increasing the whiteness of bleached pulp by adding a chelating agent with a reductive bleaching agent. It would have been obvious to use a chelating agent in combination with the reducing bleach agent of WO 96/20308 and/or ECKERT and/or EVANS et al to increase the whiteness of the pulp as taught by NYE (column 2, lines 6-9) or EO 0 608 687.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/20308 in view of ECKERT or EVANS et al as applied to claim 1 above, and further in view of ADMITTED PRIOR ART (specification, page 2, lines 13-21).

The addition of additives at the stock (machine) chest is well known in the art as evidenced by the ADMITTED PRIOR ART (specification, page 2, lines 13-21). It would have been obvious to add the carbonate and bleaching additives of WO 96/20308 at the machine chest as taught by the ADMITTED PRIOR ART.

Claims 1-8, 10 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over or HOVEY in view of TSUKAMOTO et al.

HOVEY teaches incorporating mechanical pulp with calcium carbonate filler to inhibit the alkaline darkening (page 4, column 1, lines 6-9) of mechanical pulp during the drying of the pulp (page 1, column 2, lines 28-33) and teaches that is preferred to reduce the pH to about 7.5, though it could be as high as 9 to 10. HOVEY teaches that the paper made by the process of the Patent produces paper slightly alkaline and as a consequence fades less rapidly than usual groundwood papers (page 4, column 1, lines 14-18). TSUKAMOTO et al teaches mechanical wood pulps can have their brightness increased by sulfonating the pulp in the drying stage with alkali and alkaline sulfite. It would have been obvious to one of ordinary skill in the art that the darkening of the mechanical pulp of HOVEY could be further prevented by adding a sulfonating agent, e.g. sodium sulfite, during the drying stage as taught by TSUKAMOTO et al to brighten the pulp. It would have been especially obvious to use the sodium sulfite in combination with the calcium carbonate of HOVEY as TSUKAMOTO et al teaches using the sulfite in combination with calcium carbonate buffers to control the pH to a pH of 8 to 10 when using a single sulfite. It is noted that the claims are not limited to when the sulfite is added. See HOVEY, page 4, lines 6-18 for teaching that calcium carbonate filler inhibits darkening of the pulp. Obviously the fading less rapidly of the paper is equivalent to the claimed inhibit darkening. See TSUKAMOTO et al for adjusting the pH with either an acid or a buffering agent, see column 4, lines 12-28.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over HOVEY in view of TSUKAMOTO et al as applied to claim 1 above, and further in view of NYE or EP 0 608 687.

NYE (column 2, lines 6-9) or EO 0 608 687 teach increasing the whiteness of bleached pulp by adding a chelating agent with a reductive bleaching agent. It would have been obvious to use a chelating agent in combination with the reducing bleach agent of HOVEY and/or

TSUKAMOTO et al to increase the whiteness of the pulp as taught by NYE (column 2, lines 6-9) or EO 0 608 687.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over HOVEY in view of TSUKAMOTO et al as applied to claim 1 above, and further in view of ADMITTED PRIOR ART (specification, page 2, lines 13-21).

The addition of additives at the stock (machine) chest is well known in the art as evidenced by the ADMITTED PRIOR ART (specification, page 2, lines 13-21). It would have been obvious to add the carbonate and bleaching additives of HOVEY and/or TSUKAMTO at the machine chest as taught by the ADMITTED PRIOR ART.

The argument that by adding sulfite, the darkening is inhibited before bleaching is not convincing as such would have been obvious from the teachings of ECKERT. ECKERT teaches that the reducing bleaching agents, e.g. sulphites, when added to mechanical pulp, remove or alter the lignin of the pulp such that the resultant pulp is no longer light absorbing or dark in color (column 1, lines 63-68). Thus the addition of a sulphite to a pulp to inhibit darkening, e.g. to inhibit darkening of the pulp by removing or altering the lignin to become none light absorbing, would be expected from the teachings of ECKERT or EVANS (column 1, lines 34-40). Clearly if the lignin is removed or altered to become none light absorbing, darkening would be prevented or inhibited.

The arguments with respect to HOVEY are not convincing as HOVEY teaches that using 3%-9% calcium carbonate filler can offset the calcium carbonate darkening that occurs when lower amounts are used (column 2, lines 60-65 and 39-47). Thus HOVEY odes not teach away from brightening a calcium carbonate filled pulp.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

When filing an "**Official**" **FAX** in Group 1730, please indicate in the Header (upper right) **"Official"** for papers that are to be entered into the file. The **"Official" FAX** phone numbers for this TC 1700 are:

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Any inquiry concerning this communication or earlier communications from the **primary examiner** should be directed to **Steve Alvo** whose telephone number is **(703) 308-2048**. The Examiner can normally be reached on Monday - Friday from **6:00 AM - 2:30 PM** (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stanley Silverman, can be reached on 703-308-3837.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Group receptionist** whose telephone number is **(703) 308-0661**.

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MSA
1/26/03

STEVE ALVO
PRIMARY EXAMINER
ART UNIT 1731